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RHINITIS, SINUSITIS AND HEADACHES

A **headache** or **cephalalgia** is pain anywhere in the region of the head or neck

Headache Facts

The brain tissue itself is not sensitive to pain because it lacks pain receptors

Nine areas of the head and neck have pain-sensitive nerve fibers

- Periostium of the skull
- Muscles, arteries and veins
- Subcutaneous tissues
- Mucous membranes of the
  - Eyes
  - Ears
  - Nose
  - Sinuses

90% of Americans have at least 1 headache per year

NIH Classification of Headaches

- Vascular
- Muscular
- Cervicogenic
- Traction
- Inflammatory

Migraine

Recurring, debilitating head pain lasting from 4 to 72 hours

- Throbbing pain with unilateral focus
- Exacerbated by routine activity
- Nausea and vomiting
- Hypersensitivity to light, sound and touch
- Female predominance
- 25% of migraines improve with nasal treatments

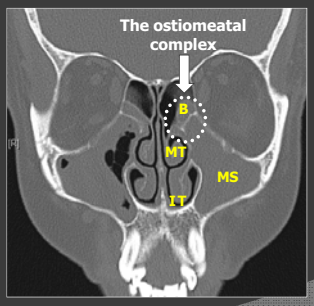
Vascular headaches

- Migraine
- Toxic (caused by fever)
  - Second most common vascular headache
- Cluster
  - Severe, recurrent with pain centered around the eye
  - May have unilateral nasal congestion and rhinorrhea

Headaches of nasal origin

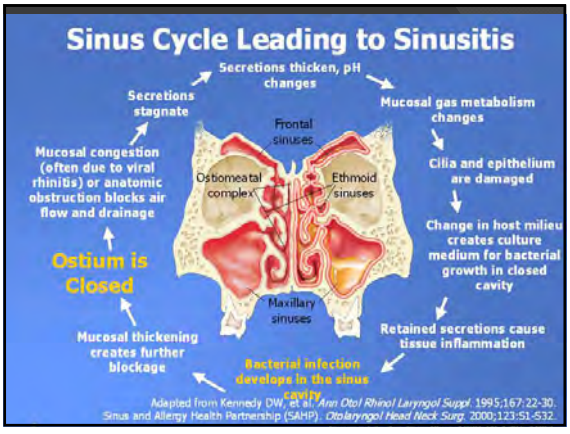
- Sinus pain and pressure
- Rhinologic headache
- Bacterial rhinitis

Infections may obstruct the OMC



Key

B: bulla ethmoidalis
IT: inferior turbinate
MT: middle turbinate
MS: maxillary sinus



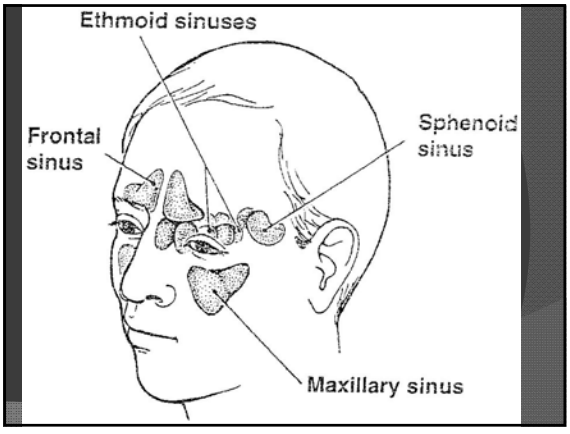
The Signs and Symptoms of Acute Sinusitis

Acute sinusitis (symptoms persisting 10-28 days):

- Prerequisite symptoms:
  - Persistent URI (>10 days)
  - Persistent muco-purulent nasal or post-pharyngeal discharge
  - Cough, throat clearing
- Supporting symptoms:
  - Nasal congestion
  - Facial pain/pressure
  - Post-nasal drip
  - Fever
  - Headache, facial pressure, tenderness
  - Anosmia, hyposmia
  - Ear pain, pressure
  - Halitosis
  - Upper dental pain
  - Fatigue
  - Sore throat

Does this patient have sinusitis?

- Must have congestion and purulent drainage
  - Green, not yellow secretions
- Most patients lose their sense of smell
  - Rate your sense of smell between 0 and 10, 0 is zero; 10 is normal; same scale for taste
- Headache and facial pressure:
  - Over sinus area
  - Steady, not throbbing
  - Lasts for hours
  - Worsens if head is moved
    - Have patient touch chin to chest or shake head "no"
  - Tenderness over sinus when tapped with finger

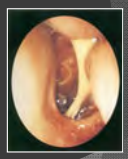


Pain in Acute Rhinosinusitis

Maxillary	malar, posterior nasopharynx, pain in the upper teeth, zygoma,temple hyperalgesia
Frontal	Forehead, orbit, zygoma, temple
Ethmoid	Nasal bridge, inner canthus, eye movement
Sphenoid	Vertex, retro-orbit, between eyes, zygoma, temple

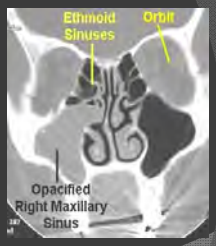
Does patient have sinusitis?

- PE:
  - Congestion
  - Sometimes erythematous mucosa
  - Purulent drainage -middle meatus
    - Stranding?
    - History of green secretions?
      - Green, yellow-green, gray
  - Asymmetric transillumination
  - Tenderness over sinus by percussion



Does patient have sinusitis?

- CT Scan
  - Gold standard
  - Limited cut, coronal plane
- MRI
  - Very sensitive
  - Useful for fungal sinusitis
    - Cold T2 weighted image



Does patient have sinusitis?

- Culture of middle meatus
  - Cotton swab is generally useless
  - Use Calgiswab
    - Pediatric urethral culture swab
    - Calcium alginate on a wire
    - Allows direct culture from meatus
- Overall: of some use, some of the time

2013 Approach to the Treatment of Acute Rhinosinusitis

1. Hydration (6 - 8 glasses of water per day)
2. Long-acting topical nasal decongestant, BID X 3-7 days (oxymetazoline)
3. Nasal saline applied with nasal irrigation device, BID
4. Topical nasal CCS, 2 sprays EN BID
5. If symptoms persist past 7-10 days: Antibiotics X 7-14 days (until asymptomatic +5-7 days). Choices: amoxicillin/clavulanate, cephalosporin, clarithromycin, zithromycin, quinolone. (clindamycin)

Antibiotics in acute rhinosinusitis?

- Don't treat common viral cold with antibiotics
- Use symptomatic treatment in mild acute rhinosinusitis
  - saline
  - topical decongestant
  - NCCS
  - Analgesics
- Use topical steroids in acute and chronic sinusitis (evidence A)
- Reserve antibiotics for severe, acute, presumably bacterial rhinosinusitis

Recommended antibiotic choices - 2013

First choice:

- Amoxicillin/clavulate or cephalosporin
- Good second choice: Clarithromycin (Zithromycin, 5-0-(5), may also be quite useful)

Back-ups:

- Quinolones
- Use metronidazole plus one of the above or clindamycin when gram negative is suspected
- Topical mupiricin very useful in select cases

Bacterial Rhinitis

(local nasal infection)

- Doc: I got sinus!
- Sick all the time, congestion, headache, facial pressure, green drainage, gets sick a few days after last antibiotic, 5-10 antibiotics per year
- But ***Normal* sense of smell, normal CT**
- ENT evaluation and they did NOT recommend surgery

Bacterial Rhinitis

(Local nasal infection)

- Not currently recognized as specific disease
- Local Staph or Strept infections
  - **Crusting, green secretions**
  - Excess drainage
    - Throat clearing, cough, runny nose
  - Often young, with constant or recurrent illness
  - ***But normal CT***
  - No anosmia (often a keen sense of smell)
- Culture positive for Staph or Strept species
- High degree of suspicion
- Often with contact points (septum-turbinate, spurs)

Treatment of Bacterial Rhinitis

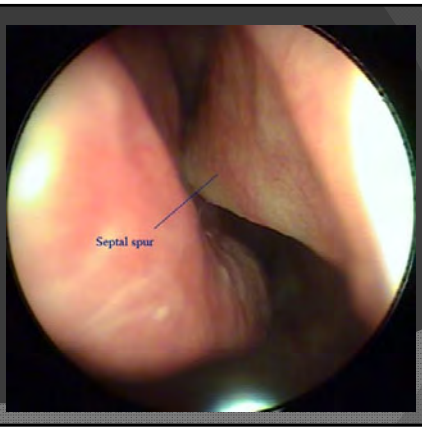
- Topical Bactroban (mupiricin) 2%
  - Instilled locally (finger, Q-tip) and massaged back
  - Alternative: Dissolve BB in sinus rinse
    - Add ½-1 inch strip of BB, add 1 Oz hot water, shake and dissolve BB, QS to 4-8 Oz, add salt, shake and then wash nose and sinuses
  - May be used chronically or as needed

Rhinologic Headaches

- Recurring headache and secretions in young, healthy patient (usually female)
- Headache is nasal/sinus in location
  - Steady, lasts hours to days, not affected by head movement
- Secretions are yellow or clear; not purulent
- Normal CT

Rhinologic Headaches

- PE:
  - Septal deviation with septum-turbinate contact
    - Septal spur with spur-turbinate contact
  - Turbinate-turbinate contact
  - Posterior valve
    - Turbinate-turbinate-septal contact
  - Clear secretions
  - Adequate middle meatus/ostiomeatal complex



Rhinologic Headaches

- Diagnosis is by high index of suspicion
  - Headaches and non-purulent secretions and normal sense of smell
  - **Normal** CT scan
- Apply nasal decongestant
  - Spray or swab
- Apply 4% Xylocaine
  - Spray or swab

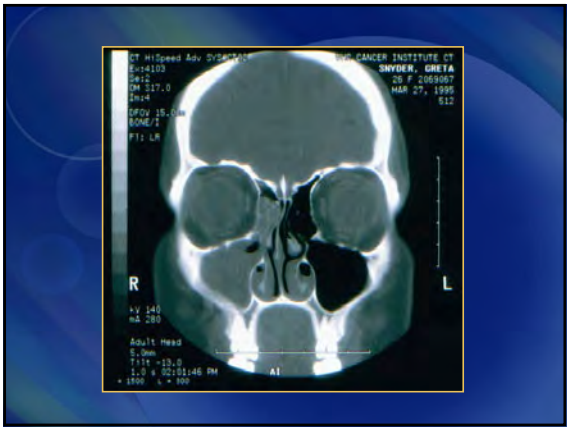
Evaluate headache

Rhinologic Headaches

- Treatment:
  - Nasal saline washes
  - Nasal corticosteroids +/-
  - Nasal antihistamine
    - azelastine or olopatadine
  - Combined azelastine-fluticasone
  - PRN topical nasal decongestant
  - PRN topical nasal Xylocaine

Use to prevent headaches from occurring

Use to treat headaches as they occur



Unilateral Sinusitis

- Dental abscess
  - Foul smelling, evidence of periapical abscess
- Fungal sinusitis
- Polyp
- Mucocoele
- Tumor of the sinus/nose
  - Inverted papilloma
- Congenital aplasia/hypoplasia

Odontogenic Sinusitis
(Dental Periapical Abscess)

- Unilateral sinusitis
  - Nearly always in maxillary sinus above the site of the abscess or perforation through the floor of the sinus after dental procedure
- Foul smelling
  - Microaerophilic Strept species
- Persistent or recurring

Odontogenic Sinusitis
(Dental Periapical Abscess)

- Diagnosis is by dental x-ray and confirmation of presence of periapical abscess
- Treat by root canal and drainage of abscess
- Requires penicillin-type antibiotic